

## **REMARKS**

The Applicants have received and reviewed the Office Action mailed June 14, 2007. The Applicants originally submitted claims 1-21 in this application. By a previous Response filed December 14, 2006, the Applicants amended claims 4, 5, 10-12, 14, 19 and 20, and canceled claim 6. By a previous Response and Amendment filed on March 26, 2007, the Applicants amended claims 1, 3, 11 and 13, but have not canceled any claims. Thus, claims 1-5 and 7-21 remain pending in this application.

### ***Claim Rejection Under 35 U.S.C. §103***

Claims 1-5 and 7-21 are rejected by the Examiner under 35 U.S.C. §103(a) as being unpatentable over Ostlund, U.S. Patent No. 5,699,178 (the '178 reference) in view of Vujkovic-Cvijin et al., U.S. Published Patent Application No. US 2003/0039015 (the '015 reference). The Applicants respectfully traverse the rejection.

The Examiner relies on the '178 reference as disclosing "an optical communications network (fig. 6) in which interoperable optical frequencies are defined without an absolute frequency reference, the network comprising: means for distributing a non-absolute frequency reference to nodes of the network (abstract; column 2, lines 26 – 31; column 4, lines 17 – 22)...". The Applicants respectfully disagree.

The '178 reference is indeed directed to using an absolute wavelength reference. The '178 patent is directed to solving problems associated with the wavelength of a transmission laser changing or drifting due to effects of aging and deviations in temperature and current. The '178 reference goes to great lengths to describe various approaches for measuring changes in the wavelength of a transmission laser at a node and adjusting the wavelength to a desired wavelength. The goal of the '178 patent and the prior art patents cited therein is to maintain the wavelength of the transmission laser at a particular wavelength. The '178 patent explicitly refers to doing this in a way that enables "absolute wavelength control" to be achieved. (See Column 2, lines 21 – 25).

In general, the '178 patent discloses receiving a reference carrier signal at a node and comparing the wavelength of the carrier of the node's transmission laser with

the wavelength of the reference carrier signal and with a correct wavelength that it is desired for the transmission laser to have, and then adjusting the wavelength of the transmission laser until it matches the correct wavelength. (See Col. 2, lines 37 – 42).

The '178 patent states:

“In the nodes are registered the moments when the wavelength of the carrier of the wavelength reference unit coincides on one hand with the wavelength of the transmitter laser, and on the other with the wavelength to which the transmitter laser should be stabilized. The time difference between these two occurrences constitutes a measure of the wavelength error of the transmitter laser and is used by the wavelength stabilization equipment in the node for correction of the wavelength of the transmitter. The transmitter laser has a correct wavelength when the time difference is zero.”

Thus, it is clear that the wavelength of the node's transmission laser is being measured and adjusted until it coincides with a particular absolute wavelength. The text of the '178 patent also states that the logical unit shown in Fig. 1 receives information identifying the particular wavelength that the transmission laser is to have from the main control system of the network and then performs the initial steps involved in the comparison and adjustment processes, i.e., calculating the frequency FM based on information received from the main control system and generating a sine signal based on FM to be fed to the multiplier shown in Fig. 1. (See Col. 5, lines 29 – 34).

It is clear from the text and figures of the '178 reference that the wavelength at which the transmission laser is maintained and stabilized is an absolute wavelength dictated by the main control system of the network. Both the reference wavelength and the frequency FM are utilized in conjunction with the laser's current transmission wavelength to achieve the stabilized desired transmission wavelength for the laser. Therefore, it is respectfully submitted that the Examiner's statement that the '178 reference discloses “an optical communications network (fig. 6) in which interoperable optical frequencies are defined without an absolute frequency reference” is incorrect.

The Examiner correctly notes that the '178 reference does not disclose a tunable multi-channel device generating channels with equal channel spacing, and a control circuit operable to frequency align one of the channels with the non-absolute frequency reference, as recited in the independent claims of the present application. The '178 patent discloses each node having a single transmission laser, as shown in Fig. 1. The

Examiner states, however, that this feature of the invention is well known in the art, and relies on the '015 reference as an example of art that teaches this feature of the invention. The Applicants respectfully disagree with the Examiner's finding that these features of the invention are well known in the art, and with the Examiner's finding that the '015 reference teaches these features of the invention.

As stated repeatedly in previously filed Responses, the '015 reference is directed to tuning multiple lasers of a dense WDM (DWDM) system to an absolute frequency, and directing the light from the lasers into an etalon, which is then used to tune each of the lasers to a different etalon frequency fringe (resonant peak), which becomes the channel for that laser. As previously reiterated, the '015 reference clearly is directed to using absolute frequencies and does not suggest using non-absolute frequencies, which is completely opposite from the Applicants' claimed invention. See, e.g., the '015 reference at paragraph [0029], in which it is discussed that each laser is tuned to a set of equally spaced wavelengths according to the ITU frequency grid. It is absolutely clear that the '015 reference is directed to using an absolute reference frequency and absolute frequencies that are spaced absolute distances from the absolute reference frequency at the etalon fringes, all of which are set in accordance with the ITU standard.

As discussed in the Applicants' specification, e.g., in paragraph [0002], the set of wavelengths according to the ITU frequency grid defines absolute frequencies. As discussed hereinabove, the Applicants' claimed invention involves using a non-absolute frequency reference and frequency aligning a channel of the multi-channel device to the non-absolute frequency reference. Thus, the tuning in the '015 reference is the complete opposite of that of the Applicants' claimed invention. Accordingly, the combination of the '015 reference with the '178 reference does not disclose or suggest the Applicants' claimed invention. Each of independent claims 1, 9, 13, and 18 disclose at least the features of the invention discussed above, which are not taught or suggested by the '178 and '015 references, taken alone or in combination.

In view of all of the above, the Applicants respectfully submit that, even assuming, *arguendo*, that some motivation or suggestion exists for combining the teachings of the '178 reference and the '015 reference, the combined teachings do not disclose, teach or suggest the Applicants' claimed invention. Accordingly, the Applicants respectfully submit that independent claims 1, 9, 13, and 18 are patentable over the '178 reference in view of the '015 reference, and respectfully request that the rejection of these claims under 35 U.S.C. §103(a) be withdrawn.

For at least the reason that dependent claims 2-5, 7-12, 14-17, and 19-21 depend directly or indirectly from one of independent claims 1, 9, 13, and 18, and therefore incorporate the features thereof, these dependent claims are also patentable over the '178 reference in view of the '015 reference. Accordingly, the Applicants respectfully request that the rejection of these claims under 35 U.S.C. §103(a) also be withdrawn.

**CONCLUSION**

In view of the foregoing, the Applicants believe the remaining rejections have been overcome and/or traversed and that the application is now in condition for allowance. Should there be any further questions or concerns, the Examiner is urged to telephone the undersigned attorney.

Respectfully submitted,

/Daniel J. Santos/  
Daniel J. Santos, Reg. No. 40,158

Smith Frohwein Tempel Greenlee Blaha, LLC  
Two Ravinia Drive, Suite 700  
Atlanta, Georgia 30346  
Phone: 770.709.0013  
Fax: 770.804.0900